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A test of recent subcultural explanations of White violence in the United States

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Abstract

Recent subcultural theories suggest that real and perceived status loss among some White males as a result of social change during the last four decades–such as increasing gender and racial equity and agricultural job loss–added to the traditional patriarchal and masculine characteristics of this group to create cultural adaptations that led to higher levels of violence. One would thus expect higher homicide rates in areas where these traits are more fully developed and/or where status threats are more strongly felt. To test the efficacy of these claims, this study used OLS regression, and (1) employed census 2000 data and both homicide victimization and arrest data to update and replicate a common model of social structure and homicide, and then (2) added several variables to this baseline model that represented the subcultural traits, conditions, and behaviors outlined by these theories. The analyses yielded little support for these ideas. Thus while they might be appropriate for explaining the variation of the strength of specific subcultures and types of violence (e.g., Far Right wing paramilitary groups and political violence), an extension of these theories to more general interpersonal violence did not appear warranted.

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Introduction

This study examined the relationship between structure, culture, and homicide in the United States by testing new hypotheses generated by recent theoretical discourse. Specifically, a set of theories argues that social and economic changes in the U.S. created real and perceived structural dislocations among a segment of the White male population that, together with traditional characteristics of this group, are suspected of creating cultural adaptations that lead to higher rates of violence. Although the present authors believed these theories might be appropriate for helping to explain the distribution of subcultural values, participation in paramilitary groups, interpersonal violence directed at members of certain groups (e.g., violence against women, hate crimes against ethnic minorities and gays and lesbians), or political violence, they were skeptical of their ability to explain overall levels of interpersonal violence. The authors therefore undertook an initial analysis of their explanatory power.

While recognizing important theoretical and methodological innovations, this topic is introduced here by addressing a few points of concern about the homicide literature. During the past four decades, there were continuous debates about the influence on homicide rates of cultural or subcultural traits (see Corzine, Huff-Corzine, & Whitt, 1999, for a review), especially among southern Whites (Hackney, 1969; Loftin & Hill, 1974; Nisbett & Cohen, 1996) and

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inner-city Blacks (Anderson, 1999; Curtis, 1975; Wolfgang & Ferracuti, 1967). With few exceptions (Dixon & Lizotte, 1987; Nisbett & Cohen, 1996), studies of this relationship employed simplified proxies for culture such as regional location or racial group membership. Such proxies, however, simply answer the question "are rates higher after controlling for other factors?" This is essentially a residual and does little to explain *why* rates are higher in a certain area or among a particular group unless one assumes the only remaining influence is cultural.

Another concern was that much of the literature focused on urban homicide, especially inner-city Black neighborhoods. This is understandable given the high levels of violence and related social problems in these areas, but violence is not limited to Blacks and the inner-cities of large urban areas. According to Federal Bureau of Investigation data (Fox & Zawitz, 2002), 42 percent of the homicides reported to police in 2000 occurred in small cities and suburban and rural areas.[1] Further, the White homicide arrest rate was 2.2 per 100,000 in 2000 (Federal Bureau of Investigation, 2002) and the homicide victimization rate for White non-Hispanics was 2.8 per 100,000 (Centers for Disease Control, 2002). While these rates were at their lowest levels in decades, they were still two to three times higher than in most European nations (World Health Organization, 2002).

Finally, studies of homicide often tested the same usual suspects without incorporating or testing new theories. The same holds for the recently popular trend of disaggregating rates by race, sex, and/or "type." Relying upon the same variables over and over without introducing other potential explanatory factors detracts from the criminological imagination and keeps one from investigating new claims. The rarity of tests of new theories in the homicide literature does not reflect the amount of theorizing during the last two decades. Theories about the relationship between structural forces and subcultural adaptations were refined during this time, both as they related to violence among Whites in the South (Nisbett & Cohen, 1996) and Blacks in the inner-city (Anderson, 1999). To test these claims, the present study focused on a constellation of structural forces related to White males that supposedly created new and added to underlying traditional cultural characteristics that might serve to increase violent behavior. This study also improved upon prior studies by attempting to measure specific cultural traits and their structural antecedents instead of simply relying upon regional location or group membership.

Literature review

According to many theorists, several cultural and structural changes in recent decades led a segment of the White male population in the United States to conclude that their economic circumstances worsened and that their status relative to other groups declined, causing frustration and resentment. Some scholars relied on these changes to explain the emergence of Far Right paramilitary movements that drew attention during the 1990s (Chermak, 2002; Dyer, 1997; Freilich, 2003; Gibson, 1994; Pitcavage, 2001), arguing that cultural adaptations to these social forces played an intervening role in the etiology of these movements. A related argument is that these same causal processes can be utilized to explain both political and interpersonal violence. Freilich, Pichardo-Almanzar, and Rivera (1999), and Pitcavage (2001) argued that this culture fosters deviance in general and political violence in particular. According to this perspective, this resentment is magnified by traditional patriarchal and paramilitary White male culture and is ultimately expressed in violence.

White American males have long enjoyed high status domestically and abroad. They founded the United States and for two centuries patriarchy and racism were institutionally and legally codified, allowing White males to retain their privileged status. Beginning in the 1960s, however, a number of changes occurred that caused some White males to conclude that their economic and social standing relative to other groups was declining. Gibson (1994) argued that these changes accounted for the emergence of a discernable traditional, patriarchal, and paramilitary subculture. He pointed out that the United States' failure in the Vietnam War was traumatic for many American males not only because of the military loss, but also because of its moral significance. Since many relied on their nation's unblemished military record as an indicator of moral righteousness, the loss in Vietnam stunned some Americans and caused them to confront a novel question: "If Americans were no longer winners, then who were they?" (Gibson, 1994, p. 10).[2]

The rise of a number of domestic social movements in the 1960s, moreover, acted to undermine somewhat the privileged position long held by White males. The feminist movement in particular challenged the patriarchal nature of American society. Females lobbied for and in some instances obtained a more egalitarian home life and a more open opportunity structure in the professional world. Similarly, changing immigration patterns and the civil rights movement led to greater cultural, racial, and religious diversity, increasing the political power of non-White groups in the United States relative to the past. These changes led some White American males, in particular those in the lower-middle class, to conclude that their privileged positions in American society relative to other groups was threatened (see Bell, 1963; Gusfield, 1963; Hofstadter, 1963; Lipset & Raab, 1970).

Concomitant with these real and perceived changes was the weakening of the economic positions of some White males. Many scholars documented the economic dislocation that occurred in rural areas during the 1970s, 1980s, and 1990s, and Dyer (1997) described the farm depression that plagued rural America in the 1980s and peaked in 1987. The responsibility for this severe downturn largely lies with the federal government since it encouraged farmers to expand by taking out loans in the late 1970s. Many farmers overextended themselves and when interest rates increased they could not make payments, resulting in a surge in farm foreclosures (Abanes, 1996; Davidson, 1996; Gallaher, 2003). Dyer (1997) and others maintain that rural culture places a premium on individual self-reliance and personal honor. To many farming is not just an occupation but a way of life and central to their identity, thus losing one's farm was traumatic. Further, while the recession began in the farm economy, it took on a life of its own and devastated other related industries, and Neiwert (1999, p. 326) argued that this rural depression eventually destroyed many "family farms, ranches, and small logging and mining operations."

According to Gibson (1994), one consequence of these changes was that some White American males, especially among the lower-middle class, became embittered by their perceived decline in status, honor, and power and began to yearn for the good old days. Gibson argued that this need to escape led to the creation of a subculture within which White American males continued to rule, unaffected by the changes buffeting the outside world. That is, since some White American males could not accept this changed reality, they created a subcultural toolkit (Swidler, 1986) that provided definitions and interpretations of the new situation, as well as appropriate strategies of action to deal with the threats to their privileged status. This subculture was employed to bolster self-conception and provided scapegoats for declining status (Abanes, 1996; Bennett, 1995; Durham, 1996; Neiwert, 1999). Gibson (1994, p. 149) argued that the subculture "is a living community whose members…[are] joined together against the outside world."

In this subculture, American honor and hegemony were reestablished in tales of heroic White male American warriors who go back to Vietnam to free American prisoners or strike back at communism. Gibson (1994; see also Mason, 2002) pointed to the popularity of movies (e.g., *Rambo*), novels (e.g., by Tom Clancy), comic book series focusing on heroes fighting in Vietnam, magazines (e.g., *Soldier of Fortune* and *Eagle*), games (e.g., paint ball), and gun exhibitions that reflected the paramilitary aspect of this subculture. Not surprisingly, the hero in this culture was usually a White male with a traditional and patriarchal worldview. As Gibson (1994, p. 54) said, "the point is clear: the desired future for these men is a return to the pre-feminist past," and "in the telling of the tale, it emerges that most of the enemies are not White" (p. 73). Mason (2002, p. 44) added that in this culture "men are meant to…demand submission from women, especially wives" (see also Akins, 1998; Kimmel & Ferber, 2000; Seul, 1997).

In many cases, patriarchal and paramilitaristic values are motivated by fundamentalist Christian beliefs (Dyer, 1997, p. 79; Lipset & Raab, 1970; Neiwert, 1999). For example, Blanchard and Prewitt (1993, p. 27) argued that Fundamentalist Protestantism stressed "male dominance in the home and traditional family values." Further, Gallagher (2004, p. 451) noted that "Political conservatism, embeddedness in conservative local religious subcultures, belief in husbands' headship and authority, and affiliation with particular subgroups and denominations help to locate and specify the sources that create, reinforce, and sustain more negative attitudes toward feminism within this diverse religious subculture." Relative to the paramilitaristic component, the *New York Times* recently reported on "a shift in American culture's image of Jesus. The gentle, pacifist Jesus of the Crucifixion is sharing the spotlight with a more muscular warrior……warlike image" (Kirkpatrick, 2004, p. 1). The article claimed that the popularity of the "Left Behind" book series, which promulgated an apocalyptic 'macho' conception of Jesus among many Evangelical Christians, was another indication of this cultural shift. Indeed, Ellison, Burr, and McCall (2003) found support for their contention that fundamentalist, evangelical Protestant religious culture was positively related to violence. Their results supported the idea that evangelical religious thought (e.g., a literal and infallible Bible and a Manichean dualism in which morality is clear, humans are generally sinful, and faith ensures salvation) leads to a belief system that conceives god as a deity that directs "'His' anger at transgressions, vengefulness, and [has a] willingness to use violence against those who are unrighteous enemies of His people." The authors concluded that "such powerful narratives may help sustain the view that the use of violence in certain circumstances. . .is normal and appropriate" (p. 333).

In short, this subculture honors warriors, war, and guns, idealizes physical prowess, machismo,[3] and bravery, and promotes a traditional, religious, and patriarchal agenda. Gibson concluded that "there is nothing superficial or marginal about [this culture]. . .it is a war about basics: power, sex, race, and alienation. . .These territories have. . .infused individual men. . .and society with a deep attachment to both imaginary and real violence" (1994, pp. 13–14). Thus one might expect that in certain situations (e.g., when personal honor or status is challenged), the members of this subculture would expect, accept, or even encourage a violent response (Anderson, 1999; Nisbett & Cohen, 1996).

Summary of hypotheses

This set of theories describes an underlying subculture that (1) has its roots both in traditional patriarchal culture (e.g., rural and religious conservatism) and in relatively recent social changes (e.g., real or perceived status loss due to increasing social and economic power of women and minorities relative to the past), and (2) is manifested in different behaviors characteristic of a traditionally masculine and militant nature. These theories were evaluated as they relate to interpersonal violence by testing the following hypotheses:

Hypothesis 1. Traditional culture is positively related to White non-Hispanic homicide rates.

Hypothesis 2. Paramilitary culture is positively related to White non-Hispanic homicide rates.

Hypothesis 3. Job loss in agriculture and related sectors is positively related to White non-Hispanic homicide rates.

Hypothesis 4. Female economic power relative to males is positively related to White non-Hispanic homicide rates.

Hypothesis 5. Minority economic power relative to Whites is positively related to White non-Hispanic homicide rates.

Hypothesis 6. Minority population is positively related to White non-Hispanic homicide rates.

Hypothesis 7. Traditional and paramilitary culture will condition the effects of job loss, female and minority power, and minority population on White non-Hispanic homicide rates.

Data and method

Unit of analysis

The unit of analysis in this study was the U.S. state. The proper level of analysis in homicide research had been the topic of considerable debate (Bailey, 1984; Messner, 1982; Parker, 1989). Whenever possible, the unit of analysis should derive from theory. While Fischer's (1995) subcultural theory of urbanism was based on the presence of distinct urban/rural differences in the presence and types of subcultures, the type of culture hypothesized here to influence rates of violence spans otherwise heterogeneous ecological units within a state, including urban, suburban, and rural areas. This was supported by previous research on traditional patriarchal and paramilitary culture revealing that these traits were not simply a rural phenomenon, but were also relatively widespread in suburbs and cities (Chermak, 2002; Freilich, 2003; Pitcavage, 2001). According to Churchill (2001, p. 296), while the paramilitary aspect of this subculture is often described "as a manifestation of 'rural radicalism,' the movement derives most of its strength from communities situated within the rural-suburban fringe." Further, recent studies of the distribution of this subculture and the influence of the subculture on participation in militia groups (Freilich, 2003) and political violence (Nice, 1988) were undertaken at the state level.[4]

Dependent variables

Four different homicide rates were created to test the hypotheses. The Supplementary Homicide Report (SHR) from the Federal Bureau of Investigation was the source of the first two. The first was an overall male-specific arrest rate, created by dividing the total number of males arrested for "murder and non-negligent manslaughter" by the state's male population. The second attempted to gauge arrest rates for White non-Hispanic males, since the hypotheses tested here applied directly to this group. This was more problematic since SHR data on ethnicity of homicide arrestees were missing in well over 50 percent of cases. This rate was thus created by using White male arrestees only and eliminating those cases where available data indicated Hispanic ethnicity. This process was aided somewhat because (1) two of the states with a large number of Hispanic arrestees, California and Texas, were more careful in providing data for this category and did so in most cases, and (2) a third state with a potentially high number of Hispanic arrestees, Florida, was dropped completely from this analysis because it did not provide SHR data to the FBI during this period. The remaining cases were not all White non-Hispanic, but this was the only way to estimate this, and imputing the missing data would make little sense given the large proportion of missing observations and the state-to-state variation of the Hispanic population and Hispanic arrest rates. Nevertheless, this number was divided by the male White non-Hispanic population in the state to obtain the SHR White male rate.

The second set of rates included overall and White non-Hispanic age-standardized homicide victimization rates. These rates were based on International Classification of Diseases (ICD) codes E960–E969 for homicide, not including legal interventions and executions (E970–E978). The victimization data provided broader coverage of all homicides and contained information on ethnicity, and thus these data were employed in an attempt to (1) partially overcome the problems related to low homicide clearance rates and missing information on ethnicity in the SHR data, and (2) examine the sensitivity of the findings to homicide definition. The mortality data had their own drawbacks, though, and the specific limitations of both data sets for testing these hypotheses are discussed at length in the limitations section below.

SHR data for 1999–2001 were based on data files supplied to ICPSR (study numbers 3162, 3448, and 3772, respectively) by the Federal Bureau of Investigation (2002). The homicide mortality data were for 1998–2000 (2001 victimization data were not yet available) and were obtained from the Centers for Disease Control's (2002) WISQARS system. Rates were averaged over three years to minimize chance year-to-year fluctuations. Due to reporting errors or non-reporting, arrest rates for Alabama and Kansas were based on only two years. The natural log was taken of both victimization rates and of the White arrest rate (but not overall arrest rate) in order to reduce the positive skew in each distribution. Table 1 contains brief descriptions of each dependent and independent variable, along with means and standard deviations.

Table 1
Variable descriptions, means, and standard deviations

Variable	Description	Mean	Standard deviation
Overall homicide victimization rate	Average (1998–2000) age-standardized rate per 100,000 of deaths due to homicide (CDC data)	5.54	2.86
White non-Hispanic homicide victimization rate	Average (1998–2000) age-standardized rate per 100,000 of deaths to homicide among White non-Hispanics (CDC data)	2.96	1.33
Overall homicide arrest rate	Average (1998–2000) homicide arrest rate per 100,000 (SHR data)	4.19	2.30
White male homicide arrest rate	Average (1998–2000) White male homicide arrest rate per 100,000 (SHR data)	3.80	2.46
Population size	Absolute population size of state	5,616,997	6,185,580
Population density	Persons per square mile of land area	182	250
Black	Percentage of population that is Black	9.82	9.57
Young	Percentage of population that is male and ages 15–29	10.55	0.84
Divorce	Percentage of male population ages 15+ that is divorced	9.10	1.35
Singles	Percentage of children ages 17 and younger not living with both parents	27.17	4.37
Income	Median family income	49,242	7,108
Poverty	Percentage of families living below the poverty line	8.74	2.76
Inequality	Gini coefficient of household income inequality	0.45	0.02
Unemployment	Percentage of active labor force that is unemployed	5.49	1.06
Rural	Percent of the population living in rural areas	28.31	14.91
Evangelical	Rate per 100,000 population of Evangelical Protestants	14.53	11.48
NRA	Rate per 100,000 population of NRA members	631.05	553.10
Militias	Logged per capita index of number of active militia groups in state	0.41	0.39
Female earnings	Ratio of female median income to male median income	0.62	0.05
Black earnings	Ratio of Black median income to White non-Hispanic median income	0.65	0.09
% non-White non-Hispanic	Percent of the population that is not White non-Hispanic	24.21	14.93

Note: Means and standard deviations are shown before some variables are logged.

Independent variables

The Land, McCall, and Cohen (1990) study had been widely used as a template since its publication. In order to provide a common and stable baseline model into which to introduce the variables derived from the new theories outlined above, the same measures as Land et al. were used. These included absolute population size and population density, the percentage of the state population that was Black, the percentage of the population that was male and ages fifteen to twenty-nine,[5] the percentage of the male population older than fifteen that was divorced, the percentage of children seventeen and younger not living with both parents, median family income, the percentage of the families living below the poverty line, the Gini index of income inequality, and the percentage of the active labor force that was unemployed. The natural log was taken for the measures of population size and density, percent Black, percent fifteen to twenty-nine, and percent living in poverty, since the skew statistic for each was more than twice its standard error. All of these measures were from the Census 2000 Summary File 3 (U.S. Census Bureau, 2002), with the exception of the state-level household-based Gini coefficient, which was obtained from the Survey Processing Branch of the Census Bureau's Housing and Household Economics Statistics Division. A dummy variable was employed for southern states.[6]

New measures

Several measures were employed to represent the different components of the subculture outlined above. First, an index was created to measure the traditional and patriarchal aspects of the subculture. This index was the sum of the z-scores of the proportion of the population living in rural areas and the rate per 100,000 residents of Evangelical Protestants. Second, the paramilitaristic aspect was measured by another index, which was the sum of the z-scores of the subscription rate per 100,000 residents for *American Rifleman* (the official magazine of the NRA) and the logged per capita index of the number of militia groups in each state.[7] It is noted here that the NRA and militia measures were employed to indicate more general cultural issues related to guns and paramilitary beliefs, not because the groups themselves are suspected of having a direct impact on rates of interpersonal violence.

Several measures were used to represent the various aspects of status threat to White males. The first was the minority population of the state, which was measured as the proportion of the population that was not White non-Hispanic. The second was female earning power relative to males, measured as the ratio of female median income to male median income. A similar measure was constructed for minority earning status, which was the ratio of Black median income to White non-Hispanic median income. The final measure was agricultural job loss between 1982 and 1997. Agricultural jobs were defined as farm proprietors, farm wage and salary workers, and closely related agricultural services (e.g., input industries such as agricultural chemicals and farm machinery, and post-farm services such as food processing and marketing).[8] This variable is defined here as the residual when the proportion of the overall employment in a state in this sector in 1997 was regressed on the value of this variable in 1982.

The variables measuring female and minority earning power and minority and rural population were obtained from the Census 2000 Summary File 3 (U.S. Census Bureau, 2002). The data on religious membership were taken from the American Religion Data Archive (2003).[9] Subscriptions to *American Rifleman* were obtained from the Audit Bureau of Circulation (2002). The measure of militia groups in each state was provided by the Anti-Defamation League (1994, 1995) and the Southern Poverty Law Center (1995), which had been employed elsewhere both as an outcome variable for militia group strength (Freilich, 2003; O'Brien & Haider-Markel, 1998; Van Dyke & Soule, 2002) and as an independent variable representing the militant aspect of this subculture (Pridemore & Freilich, 2005). Farm job loss was as measured by the Bureau of Economic Analysis and is available from the Economic Research Service of the U.S. Department of Agriculture (2003). While measuring subcultural traits at the aggregate level is notoriously difficult, it was believed that these indirect measures represented the main subcultural traits, conditions, and behaviors outlined in the theories and that they were superior to the simple regional and racial group proxies used in prior studies.

Methodology

The Land et al. (1990) model with all eleven covariates was estimated employing updated data from the 2000 census using Ordinary Least Squares regression. Results indicated a high degree of multicollinearity. As with Land et al., principal components analysis was used to create population structure and resource deprivation components. The former consisted of population size and density. The latter consisted of poverty, median family income, the Gini coefficient, children under

Table 2
Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1. Over. victimization[a]	1.00																						
2. WNH victimization[a]	.83	1.00																					
3. Overall arrest	.89	.69	1.00																				
4. WNH male arrest[a]	.49	.59	.60	1.00																			
5. Population size[a]	.48	.21	.44	.04	1.00																		
6. Population density[a]	.10	−.22	.19	−.10	.58	1.00																	
7. Black[a]	.76	.45	.72	.18	.65	.58	1.00																
8. Young[a]	.10	.25	.05	.19	−.08	−.51	−.15	1.00															
9. Divorce	.20	.55	.13	.33	−.31	−.53	−.19	.03	1.00														
10. Single-parents	.75	.59	.76	.45	.31	.34	.71	−.22	.15	1.00													
11. Income	−.26	−.52	−.12	−.15	.17	.44	.09	−.32	−.47	−.27	1.00												
12. Poverty[a]	.57	.64	.44	.38	.14	−.12	.27	.24	.24	.64	−.78	1.00											
13. Inequality	.27	.09	.33	.06	.47	.58	.45	−.36	−.18	.43	.03	.24	1.00										
14. Unemployment	.54	.56	.46	.49	.12	−.14	.23	.09	.25	.53	−.26	.65	.11	1.00									
15. Rural	−.14	.14	−.23	−.27	−.48	−.45	−.28	.00	.34	−.05	−.62	.24	−.05	−.09	1.00								
16. Evangelical	.57	.67	.42	.15	.16	−.12	.47	.27	.31	.46	−.61	.60	.18	.19	.42	1.00							
17. NRA[a]	−.03	.16	−.11	.00	−.37	−.56	−.33	.04	.47	−.21	−.22	.02	−.30	.12	.38	.11	1.00						
18. Militias[a]	.01	.14	−.03	.16	−.22	−.43	−.29	.26	.41	−.14	−.16	.01	−.41	.10	.02	.03	.48	1.00					
19. Farm job loss	−.18	−.03	−.29	−.14	−.18	−.40	−.31	.24	.23	−.34	−.23	.07	−.21	.01	.02	.05	.28	.21	1.00				
20. Female earnings	.26	.10	.29	.28	.32	.43	.39	−.32	−.22	.41	.31	−.02	.30	−.03	−.36	−.03	−.40	−.20	−.35	1.00			
21. Black earnings	−.41	−.13	−.38	.04	−.51	−.50	−.70	.14	.34	−.48	−.10	−.16	−.31	−.09	.24	−.27	.34	.46	.12	−.30	1.00		
22. % non-WNH	.54	.41	.56	.65	.35	.21	.44	.12	−.14	.57	.13	.35	.10	.48	−.53	.13	−.32	.00	−.19	.59	−.25	1.00	
23. South	.54	.58	.50	.21	.21	.21	.61	.03	.09	.58	−.40	.53	.34	.18	.24	.70	−.13	−.17	−.22	.15	−.27	.24	1.00

[a] Natural log transformation.

eighteen not living with both parents, and percent Black (which loaded on the component at .83, −.53, .56, .90, and .69, respectively).[10] Multicollinearity was at acceptable levels when this baseline model was re-estimated employing these components.

The new variables were then included in order to evaluate the subcultural hypotheses. Separate models were estimated using OLS regression for overall and White non-Hispanic rates, with separate models for the SHR and mortality data.[11] Finally, a series of interaction terms consistent with Hypothesis 7 were included. Their initial inclusion led to a high level of multicollinearity, so the mean was subtracted from the original scores of the two respective variables that were employed to create the interaction term in each model. These new mean-standardized scores, along with the interaction term, were then included in the model. Common exploratory data analysis techniques and regression diagnostics were used to ensure the stability of the models and are discussed below where appropriate.

Results

Table 2 shows the correlation matrix. The correlation between White non-Hispanic victimization and the White non-Hispanic male arrest rate was only .59. This was not unexpected given case definitions and means that any similarities in results employing these different outcome variables likely would not be due to a very high correlation between them. Among the variables representing the subcultural characteristics, only the presence of Evangelical Protestants (r = .67) and of minorities (r = .41) were at least moderately correlated with White non-Hispanic victimization. Only minority presence (r = .65) was as strongly correlated with White male arrests. The paramilitary variables, farm job loss, and female and Black earnings all had relatively weak correlations with White homicide offending and victimization.

Replication

Results of initial model estimation employing overall homicide rates as the dependent variable are shown in Table 3. Including all eleven structural covariates in the model resulted in a high degree of multicollinearity (models not shown here), especially for the small number of cases. After substituting the resource deprivation and population structure components, multicollinearity did not appear to be a problem. The results for victimization and arrest data were largely the same and replicated nearly exactly the inferences drawn from the state-level analyses presented in Land et al. (1990). The lone departure from the Land et al. findings was the finding that unemployment was significantly related to overall state homicide victimization (but not arrest) rates. The leverage value for Alaska, however, suggested an outlying score on the X-axis might be creating a problem. Further, the DFBETA for the unemployment variable for this case revealed that it was exerting a disproportionate influence on the regression line.[12] When Alaska was excluded from the analysis (results not shown here), unemployment was no longer significant but all other inferences remained the same. Regression diagnostics were similarly examined for all other cases and variables in order to determine the sensitivity of this model. No other problems were found. Since Alaska continued to exhibit undue influence on the regression line for the models discussed below, it was dropped from the analysis.

Results for new hypotheses

The new variables were introduced into this baseline model. Results are shown for victimization and arrest

Table 3
Overall state homicide victimization (Model 1) and arrest (Model 2) rates regressed on structural covariates and principal components, 2000

Variable	Model 1 victimization rates				Model 2 arrest rates			
	B	S.E.	β	p-value	B	S.E.	β	p-value
Constant	−3.270	1.739		.034	−9.117	7.972		.130
Resource deprivation	.256	.687	.199	.005	1.344	.473	.583	.004
Population structure	.171	4.542	.218	.010	.947	.341	.379	.004
Young males[a]	1.434	6.068	.209	.022	4.448	3.195	.148	.086
Divorce	9.035	.155	.091	.027	36.586	21.482	.213	.048
Unemployment	11.033	.094	.456	.038	−10.426	34.512	−.044	.382
South	.109	.070	.306	.243	.103	.743	.021	.446
Adjusted R^2	.628				.544			

Note: Given the hypotheses, p-values are for one-tailed tests in all tables.
[a] Natural log transformation.

Table 4a
Overall and White non-Hispanic state homicide victimization rates regressed on principal components, structural covariates, and new variables, 2000

Variable	Model 1 overall rate		Model 2 White non-Hispanic rate		Model 3 White non-Hispanic rate	
	b(β)	p-value	b(β)	p-value	b(β)	p-value
Constant	−2.137	.197	−5.230	<.001	−5.545	.002
Resource deprivation	.355 (.631)	.003	.142 (.302)	.021	.050 (.107)	.279
Population structure	.157 (.260)	.031	.109 (.216)	.014	.110 (.218)	.031
Young[a]	1.388 (.193)	.036	1.758 (.293)	<.001	1.651 (.275)	.002
Divorce	9.080 (.217)	.029	18.293 (.524)	<.001	18.617 (.534)	<.001
Unemployment	−5.454 (−.094)	.269	5.710 (.118)	.129	7.232 (.150)	.124
South	.058 (.049)	.359	.257 (.260)	.010	.217 (.219)	.030
Traditional	−.025 (−.074)	.313			.048 (.173)	.091
Paramilitary	.066 (.199)	.032			.018 (.064)	.234
Farm job loss	−.007 (−.013)	.445			−.011 (−.025)	.377
Female earnings	.368 (.035)	.399			.899 (.103)	.186
Black earnings	−.779 (−.132)	.131			−.328 (−.066)	.249
% non-White	.006 (.169)	.145			.005 (.169)	.106
Adjusted R^2	.696		.771		.785	

[a] Natural log transformation.

data, respectively, in Model 1 of Tables 4a and 4b. Results were not entirely consistent for overall rates in the two tables, and the model using arrest data also appeared less stable than the victimization model in relation to results for the covariates without and with these new variables (i.e., comparing results from Table 3 to those with Model 1 in Tables 4a and 4b). The only one of the new measures that seemed to influence overall victimization rates was the paramilitary variable (β = .199, p = .032). Overall arrest rates appeared to be associated with paramilitary (β = .158, p = .085) and traditional culture (β = −.407, p = .012), farm job loss (β = −.153, p = .074) and minority presence (β = .296, p = .045). The negative association for traditional culture runs counter to the subculture hypothesis, but makes sense relative to theories that suggest rural and conservative cultures will have lower crime rates. In any case, the subcultural theories do not claim to explain overall rates of violence, but violence among White non-Hispanic males.

Models 2 and 3 in Tables 4a and 4b show the results of model estimation employing White homicide rates as the dependent variable. Table 4a used White non-Hispanic victimization rates and Table 4b used White male (non-Hispanic, where this could be determined) arrest rates. Looking only at Table 4a, the inferences for White non-Hispanic victimization were identical to overall victimization (as shown in Model 1 in Table 3,

Table 4b
Overall and White non-Hispanic state homicide arrest rates regressed on principal components, structural covariates, and new variables, 2000

Variable	Model 1 overall rate		Model 2 White non-Hispanic rate		Model 3 White non-Hispanic rate	
	b(β)	p-value	b(β)	p-value	b(β)	p-value
Constant	1.702	.439	−3.571	.064	−2.486	.180
Resource deprivation	1.813 (.786)	.001	.023 (.045)	.433	.111 (.217)	.200
Population structure	.304 (.122)	.201	.060 (.107)	.274	−.113 (−.204)	.103
Young[a]	2.602 (.087)	.219	1.164 (.175)	.107	.679 (.102)	.204
Divorce	50.112 (.291)	.012	10.532 (.276)	.049	17.004 (.445)	.001
Unemployment	−74.131 (−.315)	.032	19.282 (.369)	.030	1.104 (.019)	.458
South	.704 (.143)	.170	.049 (.045)	.410	.159 (.145)	.189
Traditional	−.550 (−.407)	.012			−.119 (−.395)	.020
Paramilitary	.214 (.158)	.085			.003 (.011)	.467
Farm job loss	−.312 (−.153)	.074			−.077 (−.169)	.074
Female earnings	−5.703 (−.132)	.184			−.149 (−.016)	.462
Black earnings	−2.955 (−.122)	.167			.135 (.025)	.428
% non-white	.045 (.296)	.045			.019 (.547)	.003
Adjusted R^2	.651		.230		.576	

[a] Natural log transformation.

remembering that unemployment was nonsignificant after Alaska was removed), with one exception. Whereas overall homicide rates were no higher in the South when controlling for these structural covariates, White non-Hispanic rates remained significantly higher in the South when controlling for the covariates. Notice that for these commonly tested structural factors, however, inferences drawn were quite different employing arrest data (comparing Model 2 in Tables 4a and 4b). Since the concern here was with the subcultural hypotheses, this issue is not dwelled upon, though it is important to point out because (1) it continues the pattern of instability in results with the SHR data, and (2) it has important implications for the conclusions about the subculture theories discussed below.

Model 3 in Table 4a shows results when the new variables were included in the baseline model with White non-Hispanic homicide victimization rates as the dependent variable. Model 3 in Table 4b is the same except White male arrest rates were the dependent variable. Estimation using victimization data revealed no support for any of the subcultural measures, though estimates for traditional culture and minority presence were in the expected direction and had p-values around .10. Results using White male arrest data (Model 3 in Table 4b) were similar for the minority presence variable ($\beta = .547$, $p = .003$). An opposite result, however, was found for the traditional culture variable ($\beta = -.395$, $p = .02$) and a nearly-significant negative association for the farm job loss variable ($\beta = -.169$, $p = .074$), both of which were inconsistent with expectations.

Further analyses

Three further sets of analyses were carried out to test the hypotheses. The results are not included here in order to conserve space, but are available from the authors. First, each of the variables representing the theory loaded on a single principal component. Controlling for the structural covariates, including this component in the model (for both victimization and arrest data) did not provide support for the theory. A close look at the loadings on this component, however, might suggest that it was not fully representative of the theory as outlined here.[13]

Second, where possible, measures of the original structural covariates were replaced with measures of the White non-Hispanic population. Thus the new model included population structure (White population and density), resource deprivation (poverty, children under eighteen living with only one parent, and median family income, all for Whites), and measures for young males and unemployment that represented the White non-Hispanic population. All data were from the Census 2000 Summary File 3. After replacing these structural covariates and re-estimating models identical to Model 3 in Tables 4a and 4b, there were associations between White non-Hispanic victimization and paramilitary culture ($\beta = .206$, $p = .029$), Black earnings relative to Whites (though in the opposite direction than expected ($\beta = -.289$, $p = .012$)), and minority presence ($\beta = .442$, $p < .001$). Using SHR data, the results were similar for the minority presence variable, though all other subcultural measures were nonsignificant, except for the unexpected negative association between traditional culture and homicide that was found with SHR data in Table 4b.

Third, the theories suggest that the traditional and paramilitary aspects of the subculture will condition the threats represented by job loss, female and Black earnings, and minority presence. To test this, a series of interaction terms (i.e., each of the four "threat" variables x traditional, and each threat x paramilitary) was included in the model one at a time. Each was tested using the victimization and the SHR data. Of the sixteen interaction terms, only two were significant. The interaction of paramilitary culture and minority presence was positive and significant for both mortality and SHR data. In other words, the association between minority presence and both White non-Hispanic homicide victimization and White male homicide arrest rates was stronger where there was a stronger paramilitary culture.[14]

Discussion

The first issue here was the replication of the Land et al. (1990) model and the enduring effects of resource deprivation and disorganization on overall state homicide rates. The replication with 2000 data, together with the Land et al. findings employing data from 1960, 1970, and 1980, suggested that the "invariances" discovered by Land et al. continued over a long period of time. Despite changes over the last forty years in social structure, culture, demographic composition, and policy, factors related to resource deprivation and disorganization continue to significantly influence the distribution of homicide rates in the United States.

These results largely hold for White non-Hispanic homicide victimization rates, as well. Dyer's work (1997; see also Davidson, 1996) on economic dislocation and social disorganization in nonurban settings coincides with this, suggesting that social isolation can foster higher rates of violence in rural as well as urban areas. The data presented in Note 1 showed that state homicide rates were not necessarily dominated by what happens in large cities, since only a little over half (58 percent) of all homicides reported to police occur in cities larger than 100,000 population. Dyer (1997) argued that one consequence of the dislocation and disorganization in many rural areas was a rapidly decreasing population. Similarly, Stewart, Simons, and Conger (2002, p. 803) stated that "many of the economic transformations occurring in urban, inner-city communities are also occurring in small towns…for example most skilled and resourceful residents in rural settings have tended to relocate…[and] as a consequence of this out-migration many small town communities have high concentrations of disadvantaged persons." While the chain of social forces leading to isolation and deprivation among Blacks in inner cities is different from those leading to similar conditions among nonurban Whites, there is little reason to believe that similar negative outcomes will not result (Petee & Kowalski, 1993). Many scholars had long proposed that extreme right-wing groups enjoy greater success in rural areas due to its population being cut off from mainstream cultural values, which may be similar to gang membership in urban areas, and recent work by Osgood and Chambers (2000) and others also suggested that social disorganization in nonurban settings leads to higher crime rates.

New hypotheses

When subculture is tested or controlled in structural-level empirical analyses, it is usually measured in terms of region or racial group membership. Culture is admittedly difficult to measure, especially at the aggregate level, but these proxies are neither true to the theories that generate them nor are they valid measures of culture or of the structural features suspected of creating cultural adaptations. Recent alternative subcultural theories were tested here by employing measures that were related to the specific culture or the conditions suspected of creating cultural adaptations. The results revealed little support for the new hypotheses. First, female earnings relative to males and Black earnings relative to Whites were not associated with either White non-Hispanic homicide victimization or White male homicide arrest rates. Whaley and Messner (2003, p. 192; Gauthier & Bankston, 1997) argued that the threat to masculinity posed by the real and perceived challenge to men that women represent as they gain greater equality at home, at work, and in society at large might lead to male violence more generally and to greater male victimization of women. Although this analysis was not designed to test the hypothesis specifically, no support was found for the former argument. Although the backlash argument of violence against women was not tested here, it had been tested elsewhere in relation to these theories (Pridemore & Freilich, 2005).

The index of paramilitary culture also had no association with either White non-Hispanic victimization rates or White male homicide arrest rates. Interestingly enough, it did appear to be related to overall victimization ($\beta = .199$, $p = .032$) and overall arrest rates ($\beta = .158$, $p = .085$). The nature of this finding was consistent with recent literature suggesting gun prevalence was associated with cross-sectional variation in homicide deaths (Miller, Azrael, & Hemenway, 2002), though it was likely that the presence of illegal guns, not legitimate gun availability, was responsible for this association (Stolzenberg & D'Alessio, 2000).

The findings for farm job loss were also inconsistent with the theory. The association was nonsignificant for homicide victimization and negatively and nearly significant ($p = .074$) for arrest rates. The latter was the opposite of what was expected since the theory suggests agricultural job loss results in economic dislocation and social disorganization in rural areas, and thus, higher crime rates. Similarly, while there was a positive and significant association between traditional culture and White non-Hispanic victimization rates, there was also a *negative* and significant association between traditional culture and White male *arrest* rates. Given case definitions, these were not exactly contradictory findings, but neither did they instill confidence in the subcultural hypotheses. The last "threat" was minority presence. The proportion of the population that was not White non-Hispanic was positively and significantly related to White male arrest rates ($\beta = .547$, $p = .003$) and positively and nearly significantly related to White non-Hispanic victimization rates ($\beta = .169$, $p = .106$). Further, the interaction term of paramilitary culture and minority presence had a positive and significant association with White arrest and victimization rates. In other words, the association between minority presence and White violent offending and victimization was stronger where the paramilitary culture was stronger.

A final finding is worth noting. In the models estimating overall victimization, homicide rates in the South were not significantly different from the rest of the nation, suggesting that structural characteristics accounted for any variation in rates by region (Loftin & Hill, 1974). This was not the case, however, when estimating White non-Hispanic rates. Models 2 and 3 in

Table 4a revealed that White non-Hispanic victimization rates were significantly higher in the South net of other variables. This was consistent with Nelsen, Corzine, and Huff-Corzine (1994), who showed that while there was no clear regional pattern of homicide for Blacks (after controlling for metropolitan concentration of population), White homicide rates remained significantly higher in the South.

Limitations

There were a few main limitations that must be considered when interpreting these results. First, while these theories concerned mostly rural and suburban White males, the present study focused on state homicide rates. Some studies had created "rural" homicide rates or employed counties as the unit of analysis. Homicide is a rare event, though, and in sparsely populated states, the number of rural homicides are too few to estimate reliable rates. Not only does the same hold for rural counties, but such a comparison would be suspect given the data and methodological problems with county-level data discussed elsewhere (Maltz & Targonski, 2002, 2003; Pridemore, 2005; Wiersema, Loftin, & McDowall, 2000). A potential way to avoid one part of this problem in the future would be to test these hypotheses with lesser crimes, which would increase the crime count and allow for examination of nonurban areas, though this would not overcome the reliability and validity questions about the county-level data. It should be stressed, though, that the use of states made sense here because this study examined cultural characteristics among a segment of White males that, while perhaps stronger in certain rural areas, transcended urban/nonurban boundaries (Chermak, 2002; Churchill, 2001; Pitcavage, 2001), and a close look at the correlations of various measures with percent rural in Table 2 appeared to support this.

Second, while testing subcultural theories of violence at the aggregate level was not uncommon, there were difficulties inherent in accurately capturing subcultural traits with aggregate measures. This study employed measures that closely coincided with the subcultural characteristics, behaviors, and status threats discussed by the theorists, but the difficulty in this task was recognized and future research might improve upon the present study in this regard. Third, while the present study employed a cross-sectional design, there was an obvious longitudinal component to these theories. Time-series analysis would aid in confirming or refuting the present results and would also be helpful in examining fluctuations over time in the strength of the subculture and any social movements and violence (both political and interpersonal) associated with it. For example, while these subcultural traits are still widespread according to theorists, the popularity of Far Right wing paramilitary groups rose and fell over the course of the late 1980s and 1990s (Freilich, 2003; Van Dyke & Soule, 2002), as did other Far Right political violence such as crimes against abortion clinics (Lonsway, Jackman, Koenig, Leader, & Campos, 2003).

The final main limitation was the difficulty of testing theories about White non-Hispanic males with available homicide data. These are theories about violent offending, so offender-based data from the UCR would appear to be most appropriate. Yet there are many problems with these data, both generally and more specifically related to these theories. Police data only contain information about offenders who are caught. Not only has the clearance rate for homicide been falling for several years (Fox & Zawitz, 2002; Wellford & Cronin, 1999), but it varies from state to state, presenting problems for cross-sectional comparison of arrest data. Of the 13,220 homicides reported by the 2000 SHR, arrest data of any sort were available for less than 70 percent of the cases (Federal Bureau of Investigation, 2002), and the clearance rate for all homicides reported to the police in 2002 was only 63 percent (Federal Bureau of Investigation, 2003). Further, information on offender ethnicity (i.e., Hispanic/non-Hispanic) was missing for a large majority of even those cases where there was an arrest, making the construction of a White non-Hispanic offending and arrest rates questionable.

Using vital statistics data resolves the problem of clearance rates and missing information on ethnic status since reporting is near universal. Further, while homicide estimates from the two systems are not interchangeable at low levels of aggregation (Wiersema et al., 2000), agreement is traditionally very high at the state level (Rokaw, Mercy, & Smith, 1990).[15] The problem is that mortality data represent victims, not offenders. Past studies had revealed that homicide was a largely intra-racial event, however, and that victim and offender traits such as race and ethnicity tended to be highly correlated. Further, while some algorithms used to impute missing data (Messner, Deane, & Beaulieu, 2002; Pampel & Williams, 2000) substantially increased the proportion of homicides in the "stranger" category (thereby making victim-offender similarity less likely), others (Regoeczi & Riedel, 2003) indicated that many unknowns were actually likely to fall into the intimate partner, family, and acquaintance categories. Yet assuming victim-offender similarity on race and ethnicity does not resolve the problem entirely, as this results in measurement error with regard to White male offenders whose victims are not White non-Hispanic. This is important since according to these theories, the frustration among this group might be directed at those whom they perceive to represent a threat, including various minorities. These homicides would not be represented in the mortality data measuring White non-Hispanic victimization. Similarly, victimization data confound male and female offending, but the theories clearly relate to males. While the perpetrators of homicides are overwhelmingly male, especially among Whites, this still adds another source of measurement error.

Employing either data source is thus imperfect for testing theories of violence among White non-Hispanic males. Problems of this sort are not uncommon in aggregate studies of homicide, however, since scholars are often forced to rely on these data sets. Given the limitations of each of the data sources, both were employed here in order to compare the consistency of the results. Since the problems with each were quite different, one would not expect them to be the source of any similar findings. Thus while recognizing the limitations, the largely consistent findings (in relation to the subcultural measures) from models employing these different measures of the dependent variable afforded some comfort in the validity of the results.

Conclusion

The results presented here show that the Land et al. (1990) model replicated nearly exactly employing recent data. This suggests that despite major changes in American society during the last forty years, similar cross-sectional models of social structure and homicide hold during this period. The findings presented here also show a similar response of White violence rates to these same covariates. Thus one sees the enduring effect of measures of deprivation and disorganization not only over time, but among different demographic groups, which might be interpreted as an indicator that researchers are on the right path in terms of examining the structural covariates of homicide.

The nonsignificant findings for the subcultural measures do not mean that these theories are irrelevant for their original and more constrained purpose of explaining subcultural formation, the geographic variation of subcultural strength and of Far Right paramilitary groups, and specific forms of political violence that they may undertake. The authors' initial skepticism of their ability to explain the cross-sectional variation of more general interpersonal violence by White males proved founded, however, since for the most part the hypotheses tested here did not hold. For both theoretical and methodological reasons, however, it may be appropriate to test the hypotheses with different types of and lesser crimes. For example, it would be interesting to look more closely at the association between gender equity and male perpetrated violence against women, including homicide, rape, and domestic abuse. Similarly, violence by Whites directed at minorities might also provide a more specific test of one of the "threat" components of the theory. While the measures (i.e., gender and racial income equity) are economic manifestations, the underlying threat is likely broader in nature, as economic equity is only one of many elements of increased equality that may threaten those who possess this subcultural worldview.

A final key point is simply the importance of testing new theories. The last three to four decades of homicide research had allowed for the creation of models of the cross-sectional variation of homicide rates that appear to operate relatively similarly over time and with different units of analysis. There is, however, still a significant amount of variation to be explained. Some of this variation is no doubt the result of causal mechanisms at work at the individual and event levels. Some is probably due to structural and cultural processes yet to be determined, however, and relatively few studies are published that test new potential causes. Important methodological work is allowing one to be more careful and more sophisticated in terms of model estimation, and recent innovations have concentrated on the effects of these structural covariates on disaggregated homicide rates. Yet few studies introduce new variables into the equation. Even when new theoretical claims do not hold, publication of careful tests of them saves the time of others who may be considering similar research, adds to the marketplace of ideas, and leads to debate, discussion, and fermentation of new approaches. When discussing problems as serious as homicide and other violent crimes, this inquiry is vital.

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Notes

1. In 2000, there were 9,008 homicides in cities with more than 100,000 residents, 1,966 in cities with less than 100,000 residents, 3,017 in suburban areas, and 1,527 in rural areas (Federal Bureau of Investigation, 2002).

2. Recent victories by the United States military in Afghanistan and Iraq might limit the applicability of this thesis to the pre-9/11 period (Babbin, 2003; Mailer, 2003), but would obviously have no effect on the analysis carried out here.

3. This subculture's emphasis on bravery and physical prowess also ties in closely with traditional views of masculinity (see Messerschmidt, 1993; Winlow, 2001).

4. Still, given the rural and traditional component of this set of subcultural theories, it might be more appropriate to test them at the county-level. Baller, Anselin, Messner, Deane, and Hawkins (2001), however, suggested that cities or counties are probably too small a unit of analysis if regional phenomenon (e.g., diffused cultural traits) are at work. There are also other crucial limitations of the county-level data. The use of counties results in an extremely skewed distribution of homicide rates since a large proportion of U.S. counties have no homicides in a given year. Homicide estimates for small counties (and 85 percent of counties in the U.S. have fewer than 100,000 residents, most of them much fewer) are often unreliable (Wiersema et al., 2000). These problems generate unequal error variance, with errors systematically related to county population size, and thus OLS estimates would be inefficient and suffer from the undue influence of extreme values (Hampel, Ronchetti, Rousseeuw, & Stahel, 1986; Pindyck & Rubinfeld, 1998). Methodological innovations such as negative binomial (Osgood, 2000) and zero-inflated Poisson regression (Chin & Quddus, 2003; Heilbron, 1994) take into account highly skewed distributions, unequal error variance, and a high proportion of zero observations. These strategies, however, depend upon valid and reliable data, and recent measurement research showed that county-level homicide estimates are not trustworthy for counties with fewer than 100,000 residents (Wiersema et al., 2000; see also Maltz & Targonski, 2002, 2003). In fact, model instability deriving specifically from the use of county-level data in tests of other subcultural theories (Cohen, 1998; Nisbett & Cohen, 1996) appear to invalidate these tests (Chu, Rivera, & Loftin, 2000; Rivera, Chu, & Loftin, 2002).

5. This was the only departure from Land et al. (1990). They used the percentage of the entire population aged fifteen to twenty-nine, whereas this study used the percentage of the population male and aged fifteen to twenty-nine since the young male population exhibits the highest homicide victimization and arrest rates. The measure of young males was more common in the homicide literature and so it was used here.

6. In keeping with other studies, these southern states included Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

7. A third measure, subscription rates per 100,000 residents of the magazine *Soldier of Fortune*, was also obtained. This measure, however, was correlated with NRA membership at over .98 and thus was not included in the analysis.

8. Yet another status loss issue outlined by these theorists was the loss of the war in Vietnam. Therefore this study originally included a measure of the Vietnam era veteran population in each state, which was available from the Census 2000 Summary File 3. This measure had no effect on any of the outcome variables and was not included in the final models presented below.

9. A complete listing of all Evangelical Protestant groups is available from the ARDA website at http://www.thearda.com/RCMS/2000/Denoms/evangelical.html.

10. Although the Land et al. (1990) study had been used widely, there had been valid critiques of their approach. Still, the Land et al. measures and model were used here to provide a common baseline for the present analysis, for easier comparison with others' work, and because in the present study the only interest in the structural covariates was as controls.

11. Recent research (Hannon & Knapp, 2003; Osgood, 2000) had shown that potentially misleading findings could result from logging the dependent variable in an attempt to normalize its distribution, and negative binomial regression was becoming more widely used in aggregate level criminological studies when modeling counts of rare events such as homicide. In order to test the sensitivity of the OLS results to this possible complication, all models were re-estimated employing negative binomial regression. There were no significant departures from the results presented here and no changes to the inferences drawn for the variables of theoretical interest.

12. Neter, Kutner, Nachtsheim, and Wasserman (1996) suggested that leverage values in excess of 2p/n, where p is the number of regressors including the intercept and n is the number of cases, be considered outliers on the X-axis and examination of their influence undertaken. To check for outliers on the Y-axis the values of the studentized deleted residuals were checked, which follow a t distribution with n-p-1 degrees of freedom, with the critical value at t (1-α/2n; n-p-1), with α set at .10. This is the Bonferroni test and is conservative in classifying outliers. Individually and in concert, any cases with values less than but approaching this value were excluded. In each case, the inferences did not change. Finally, the influence on the regression coefficients of each case was checked by obtaining DFBETAS. Neter et al. suggested that for small and medium-sized data sets, DFBETAS of 1 or higher should be considered influential. Again, estimating the model with and without potentially suspect cases did not result in changes to the inferences drawn.

13. The traditional culture variable loaded at only .37. Female earnings (−.81) and minority presence (−.70) loaded highly and negatively on this component, and loadings for paramilitary, farm job loss, and Black earnings were .67, .51, and .59, respectively.

14. Nisbett and Cohen (1996) also mentioned the presence of a culture of honor in the West, and the present data indicated that NRA membership was highest in the mountain states (which represented 5.2 percent of the population, but 9.2 percent of NRA membership). Further, some work suggested that rates for Whites in the West might be as high or higher than in the South (Parker & Pruitt, 2000). Therefore, a West dummy was employed in place of the South dummy, and interaction terms were created for the West. Results were nonsignificant. Finally, poverty is often thought to play a role in the development of different subcultures, including the one discussed here. Interaction terms were thus created for poverty and the new variables. Again, results were nonsignificant.

15. The correlation between FBI and vital statistics data for state-level homicide rates in 2000 was .97, based upon the absolute number of murders and non-negligent homicides reported to the police (Federal Bureau of Investigation, 2001) and the absolute number of deaths due to homicide (not including legal interventions) obtained from Centers for Disease Control (2002).

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